

NAUCORIDAE AND NOTONECTIDAE (HEMIPTERA-HETEROPTERA) OF THE NORTHERN TERRITORY, AUSTRALIA.

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ABSTRACT

Some of the Naucoridae and Notonectidae of the Alligator Rivers Region are listed and their distribution compared with that of northwest Australia and Queensland. *Naucoris magela* sp. nov. and *Anisops dostini* sp. nov. are described. The plastron of *Aphelocheirus australicus* Usinger is figured and compared with another *Aphelocheirus* species.

KEYWORDS: Hemiptera, Naucoridae, *Aphelocheirus*, plastron, *Naucoris*, Notonectidae, *Walambianisops*, *Anisops*, *Enithares* Australia.

INTRODUCTION

Through the courtesy of the Office of the Supervising Scientist, Jabiru Laboratory, Northern Territory, I have been able to study a series of collections from various sites within the Alligator Rivers Region (ARR). Two genera are recorded from the Northern Territory for the first time, *Aphelocheirus* Westwood (Naucoridae) and *Walambianisops* Lansbury (Notonectidae). The data for the ARR is supplemented by that of my own resulting from field-work in the Northern Territory and Queensland in 1979.

The Naucoridae and Notonectidae of the ARR has species in common with the fauna of northwest Australia and Queensland. Lansbury (1984), commenting on the water-bugs of northwest Australia, interpreted the then available data that "few species of waterbugs are distributed along the tropical fringe from northwest Australia, through the Northern Territory to north Queensland". The ARR samples show that this interpretation needs to be revised and appears to support the concept that elements of the north western fauna reach the Arnhem Land Escarpment and genera hitherto only known from north Queensland (e.g. *Aphelocheirus* extend westwards from Cape York beyond the Gulf of Carpentaria). Large areas of northern Australia are poorly known, especially part of Arnhem Land compared with northern Queensland (Cape York).

Some of the species recorded in this survey are atypical. Where appropriate, the variations are figured and briefly compared with forms

from northwest Australia and Queensland. Two new species are described, *Naucoris magela* (Naucoridae) and *Anisops dostini* (Notonectidae).

The fine structure of the antennae and plastron of *Aphelocheirus australicus* Usinger is briefly described and compared with *A. aestivialis* (Fabricius), a moderately common west European species.

Holotypes of the new species are in the Northern Territory Museum, Darwin (NTM); paratypes in the collections of the Jabiru Laboratory, Office of the Supervising Scientist (OSS) and in Oxford (OXF). Collectors of material were: P. Dostine (P.D.); I. Lansbury (I.L.).

SYSTEMATICS

Family Naucoridae Fallen *Aphelocheirus australicus* Usinger (Figs 1-15)

Aphelocheirus australicus Usinger, 1937:341-342; Lansbury 1985:117-119; Polhemus and Polhemus 1989:184-186.

Material examined. Northern Territory, South Alligator River near El Sharana, 13°30'S 132°29'E, 16.viii.-6.ix.1989, P.D., 12 males, 8 females all brachypterous.

Descriptive notes. Polhemus and Polhemus (1989) redescribed and figured *A. australicus*.

The brachypterous form from the South Alligator River differs in trivial features from the Queensland form as follows.

Wings: The stub-like forewings (hemelytra) overlap at the mid-line and extend over the anterior margin of the 3rd tergite (Fig. 1). The

Queensland form is described as 'not attaining base of abdominal terga III, not touching medially'.

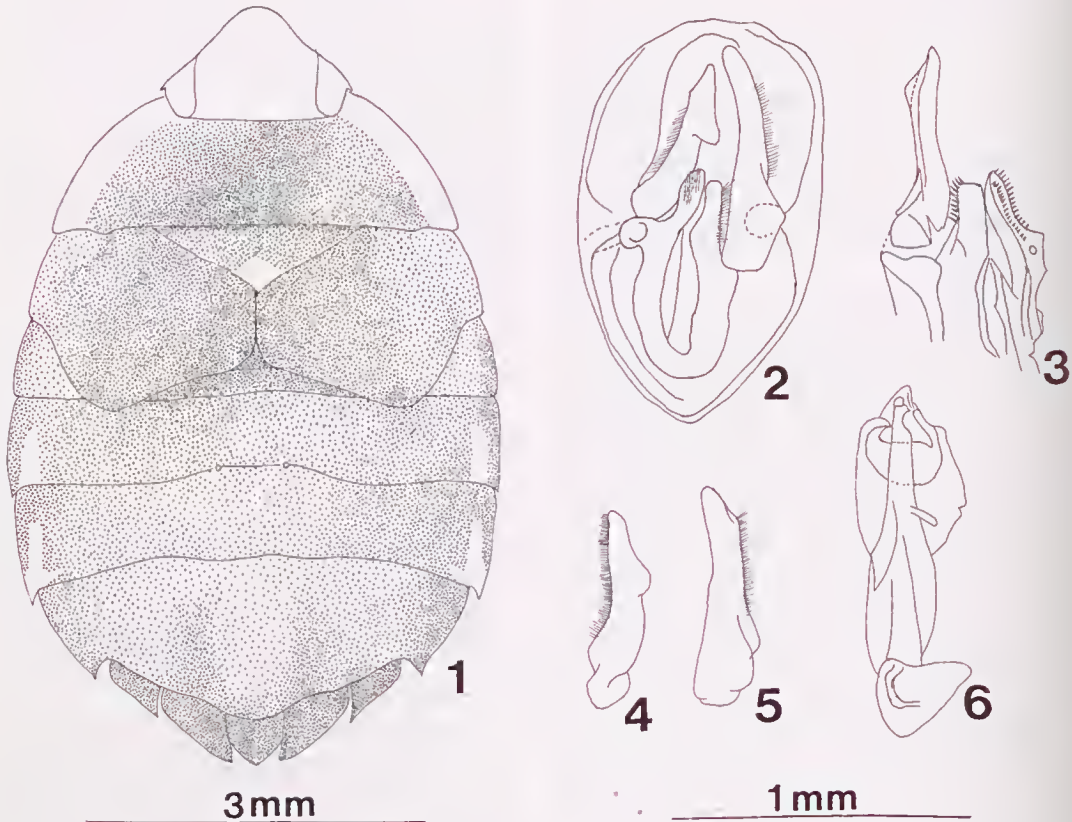
Male genitalia: differing slightly, capsule (Fig. 2), base of capsule rotated 180° showing spinose projections (Fig. 3), parameres different aspects (Figs 4-5), aedeagus (Fig. 6).

Antennae: The antennae of *Aphelocheirus* are unusual in the Naucoridae as they are long and visible from above (Fig. 10). The 3rd antennal segment bears an elongate row of procumbent spines, the 4th has a number of longer hairs which almost certainly have some sensory function (Fig. 11).

Legs: The front and middle legs are similar in general shape, the front pair are densely clothed in fine long hairs (Figs 7, 10). Middle legs rather more spinose (Fig. 8), tibiae and tarsi of the hind legs with dense fringes of long swimming hairs (Fig. 9).

Plastron: [Fine Structure] *Aphelocheirus* and several other naucorid genera, *Idiocarus*

Montandon, *Cryphocricos* Signoret, *Cataractocoris* Usinger and *Heleocoris* Stål species have been shown by Hinton (1976) to have plastrons. The function of the plastron in *Aphelocheirus* is principally respiration (Thorpe 1950). The plastron of *A. australicus* is briefly compared with Hinton's (1976) account of *A. aestivalis* which is moderately common in western Europe. The abdominal plastron of *A. australicus* is arranged in a series of sinuate lines and appears to be organised in well defined groups, each forming a continuous surface, at their junctions with adjoining groups, there is a conspicuous overlap reminiscent of an irregularly tiled roof (Fig. 12). The individual plastron hairs are inserted at a fairly acute angle to the surface unlike those of *A. aestivalis* which are erect with the tip bent over almost at right angles to the stem. The hairs of *A. australicus* have irregular nodule-like projections near the tip, these would provide support for the hairs under pressure and keep them

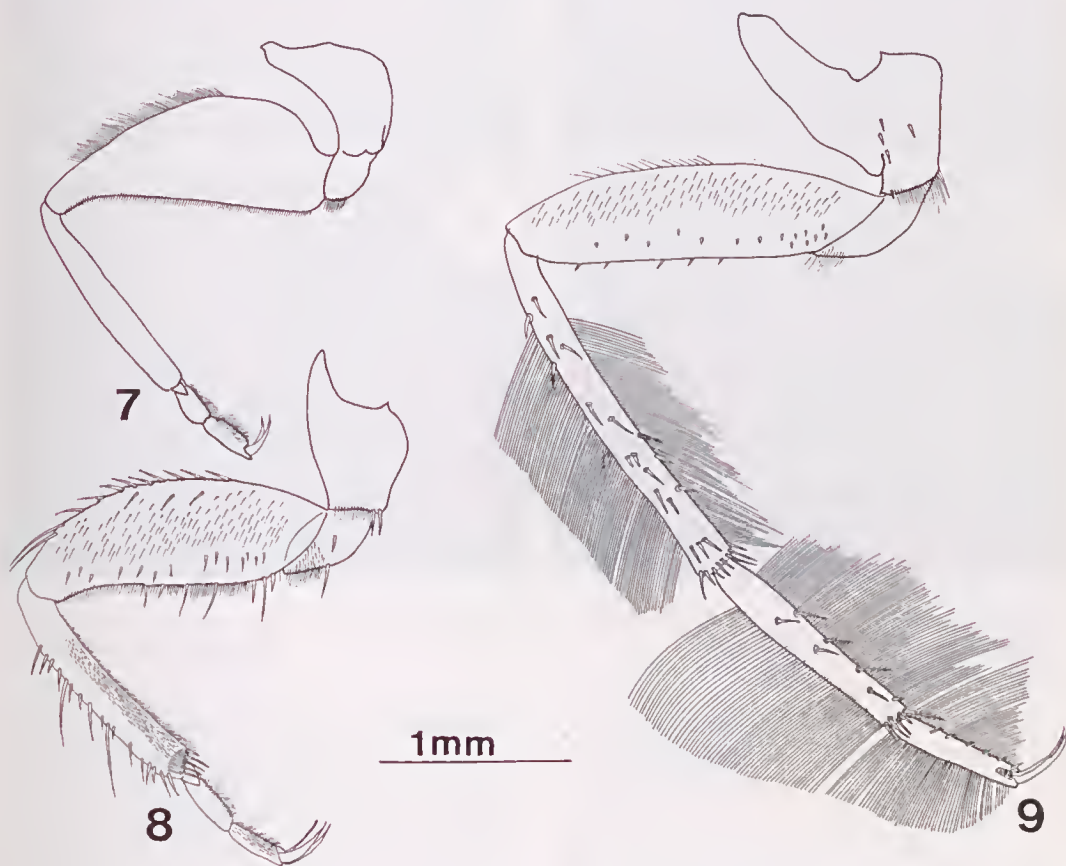


Figs 1 - 6. *Aphelocheirus australicus* male: 1, dorsal aspects; 2, genital capsule; B 3, internal structure of genitalia rotated 180°; 4, left paramere; 5, right paramere; 6, aedeagus.

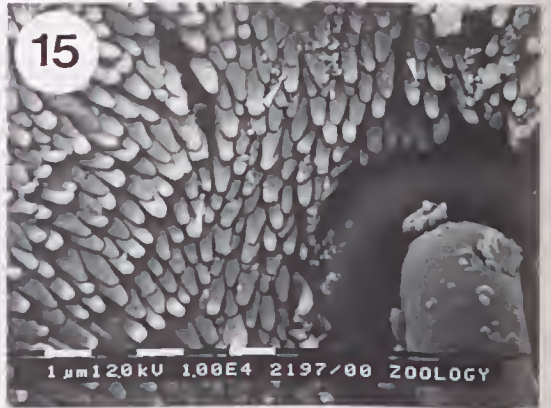
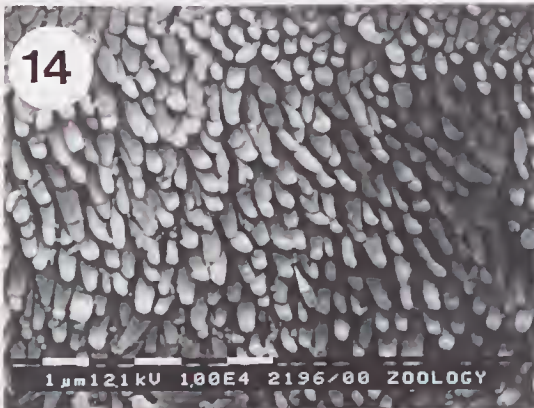
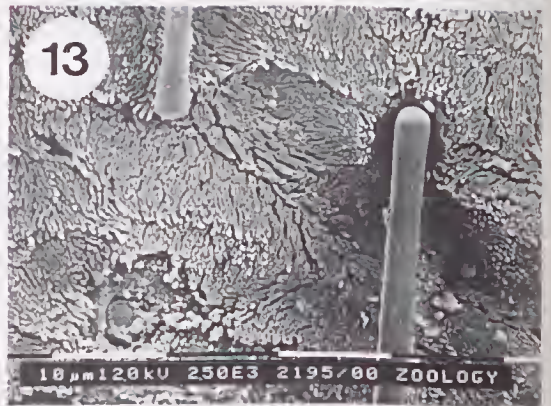
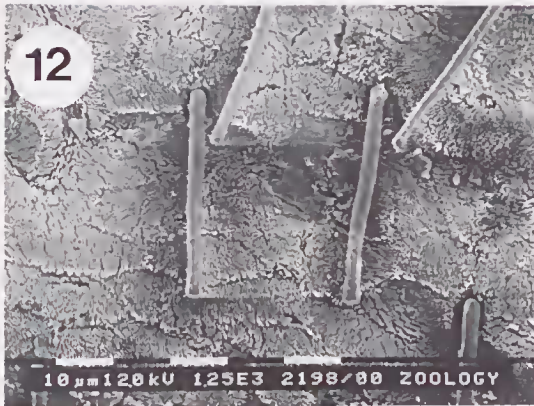
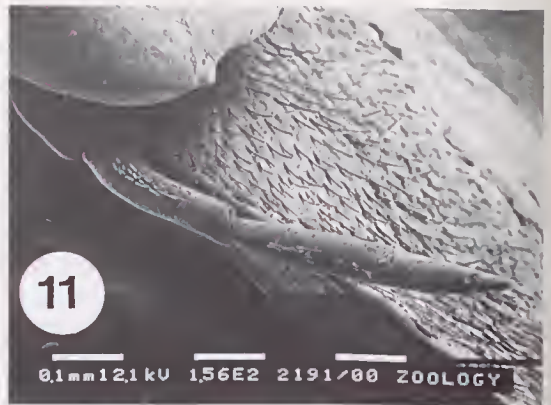
apart (Figs 14, 15). Hinton states that for *A. aestivalis*, the density of plastron hairs for most areas is certainly not less than 3 and probably about 4 million hairs per mm². From the limited studies of *A. australicus*, it is evident that the hair size varies considerably (Fig. 15). Hinton's diagram of the packing of the plastron hairs shows a much greater number of stem projections than are visible on *A. australicus*. Hinton having studied a number of micrographs of *A. aestivalis* is of the opinion that the plastron hairs showed definite clumping, creating spaces between the clumps or groups of hairs, these he suggested might be an artefact. In Fig. 12 there are a number of such spaces at various angles, in Fig. 15 there is a narrow groove with the base of a plastron hair visible, there is no evidence of clumping, the hairs are not randomly distributed but show a definite linear arrangement. Hinton's micrograph of the 1st abdominal tergite of *A. aestivalis* shows that the plastron does not cover the

intersegmental membrane, thus exposing a transverse band 3 μ m wide. The scattered macrotrichia of *A. australicus* are about 40 μ m long arising from smooth circular depressions with an area about 2 μ m wide round the base of the hair devoid of plastron (Fig. 15).

The plastron of *Aphelocheirus* in addition to its respiratory function is very resistant to wetting. Hinton describes experiments on *A. aestivalis* being subjected to pressures in excess of 2 atmospheres, the plastron remaining almost intact after 2 hours, he comments that the "plastron of *Aphelocheirus* resists wetting at higher hydrostatic pressures than that of any other known insect". Hinton make the point that in investigating the resistance to wetting of a plastron using excess pressure, there is no way in which the type of surface or contact angle and the geometry of the system can be separated. This is clearly relevant in the areas of *Aphelocheirus* which lack plastron hairs.



Figs 7 - 9, *Aphelocheirus australicus* male: 7, front leg; 8, middle leg; 9, hind leg.



Figs 10 - 15. *Aphelocheirus australicus* male: 10, head and front legs from the front; 11, antennae; 12, general view of plastron dorsally; 13, enlarged view of plastron; 14, plastron, note variation in peg size; 15, area at base of macrotrichia, nodules on plastron hairs indicated by arrows.

Thorpe and Crisp (1947) gave data from which they interpreted that the plastron would buckle when subjected to pressures in excess 2.5-6 atmospheres. Hinton (1976), reworking their data and his own refined data, gives a figure 16 times greater, the plastron of *A. aestivalis* would not buckle until the hydrostatic pressure was in excess of 40 atmospheres.

Distribution. This species is an Australian endemic. Previous records have been exclusively from Queensland (Lansbury 1985; Polhemus and Polhemus 1989), from the Cairns area north to the Lockerbie area of Cape York. Its occurrence in the Northern Territory extends its distribution westwards ca. 1300 km.

Naucoris magela sp. nov.
(Figs 16-21, 23-25)

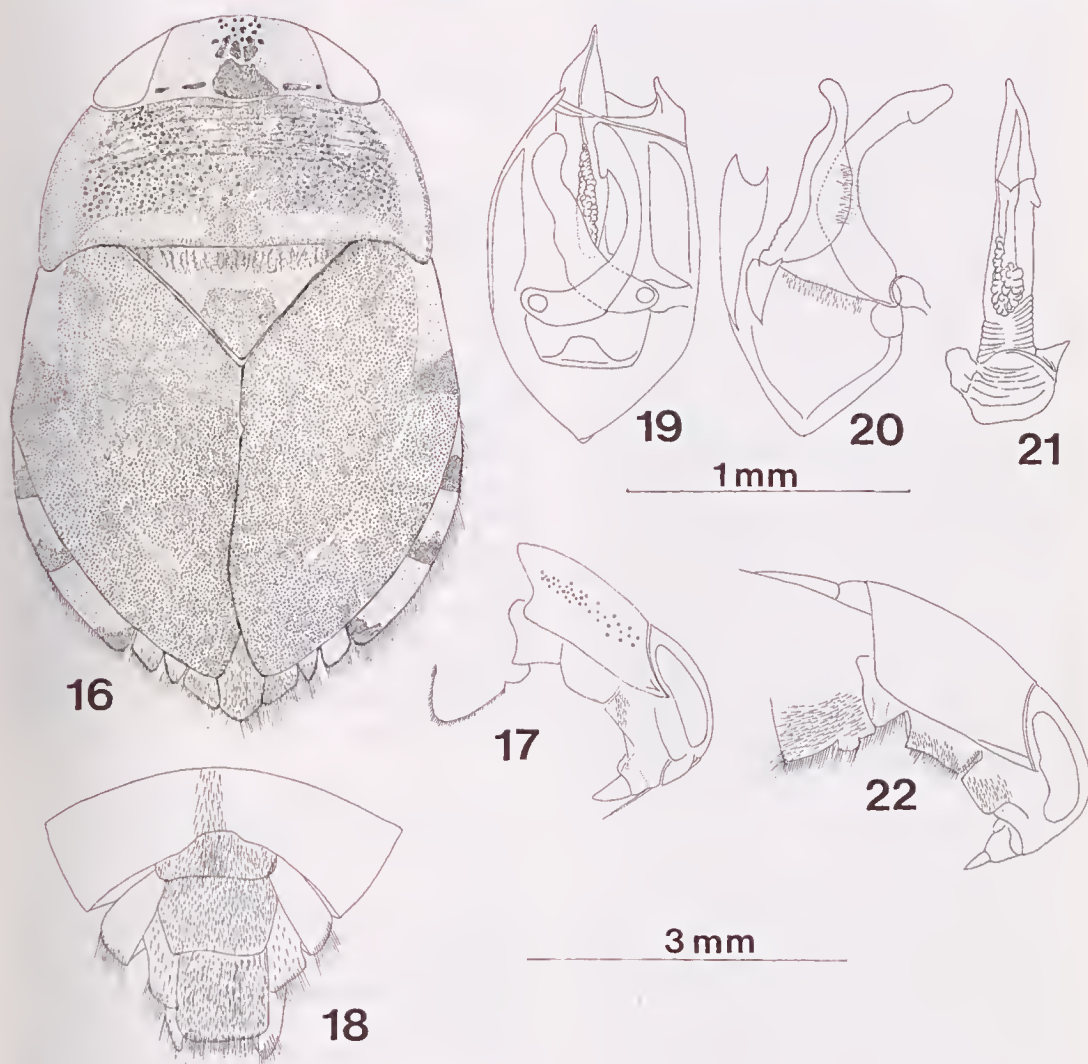
Type material. HOLOTYPE - male Northern Territory, Bowerbird billabong 12°47'S 133°03'E, 27.x.1988, P.D., in NTM. PARATYPES - one male, one female same data as holotype in OSS and OXF.

Additional material. One 5th instar nymph, same data as the holotype in OSS.

Description (Adult). Male 6.5 mm long, females 7.2 mm long, maximum width both sexes 4-4.3 mm.

Coloration. Head yellowish brown, postero-medially with a broad longitudinal stripe

of irregular dark brown spots, anteriorly spots irregularly scattered. Pronotum laterally broadly pale yellowish brown, disc medially with a dark brown inverted 'U' shaped figure, anterior margin with confluent dark brown-black spots becoming obsolescent posteriorly. Hind margin with black wedge shaped pattern. Pronotum shining, faintly rastrate laterally, striations more conspicuous across darker areas. Scutellum pale yellow with broad dark brown bar interrupted basally adjacent to posterior margin of pronotum. Embolium anteriorly yellowish brown continuing coloration of lateral margins of pronotum. Clavus, corium and part of embolium dark brown-black with two



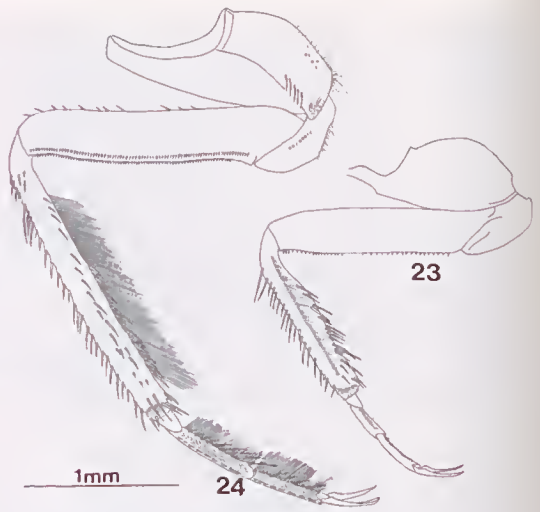
Figs 16-22. *Naucoris* sp. male: 16-21, *magela* sp. nov. paratype, 16, dorsal aspect; 17, side view of head and pronotum; 18, distal sternites; 19, genital capsule; 20, parameres; 21, aedeagus; 22, *subopacus*, side view of head and pronotum.

(1+1) curved yellowish brown stripes converging posteriorly. Membrane not differentiated from clavus. Connexivum pale yellow, posterior angles of visible segments dark brown-black. Underside pale yellowish brown. Visible part of embolium narrowly dark brown-black. Sternites 6-7 and operculum distinctly darker. Legs yellowish brown.

Structure. Posterior width of vertex 1.2x greater than anterior width of vertex. Inner lateral margins of eyes slightly convex. Greatest width of head 3.3x median head length and just over 0.5x median pronotal length. Labrum 1.6x wider than long. Maximum pronotal width 2.5x median length, lateral margins slightly convex, posteriorly almost parallel sided. Postero-lateral angles overlapping embolium, posterior margin otherwise straight. Pronotal spots slightly sculptured. Striations anteriorly in transverse convex rows, posteriorly pronotal surface irregularly rugose. Scutellum 1.9x wider than long, faintly rugose laterally, dark band conspicuously rugose. Emboliar fracture visible anteriorly, posteriorly obsolete. Clavus and corium not differentiated, surface texture minutely rugose, posteriorly shining with minute greyish spicules. Postero-lateral angles of 3rd and 4th connexiva forming an approximate 90° angle, 5th slightly produced (Fig. 16).

Prosternal ridge more or less continuous with underside of head. Mesosternum prominent, raised posteriorly, lateral margins with fine silvery hairs, apex of ridge densely hairy. Metasternum angular, apically carinate (Fig. 17). Second sternite with small thin keel, Sternites 2-5 covered with adpressed yellowish pubescence, longer along mid-line. Sixth sternite, mid-line of 7th and operculum with longer pale yellow adpressed pubescence. Ventral latero-tergites narrow. Male 5th sternite and associated structures (Fig. 18). Middle and hind legs (Figs 23-24), hind tibiae-tarsi with prominent fringe of swimming hairs. Male genital capsule sclerotised (Fig. 19), parameres (Fig. 20), aedeagus (Fig. 21).

Description (Nymph). Fifth instar 5.8 mm long, width 3.8 mm. Posterior width of vertex between eyes greater than anterior width; inner eye margins straight converging slightly anteriorly. Greatest width of head almost 3x median head length and subequal to median pronotal length. Maximum pronotal width 4x median length, lateral margins divergent and slightly convex, postero-lateral angles slightly



Figs 23-24. *Naucoris magela* sp. nov. paratype male; 23, middle leg; 24, hind leg.

overlapping mesonotum. Metanotum and tergites covered with brownish black spots on a yellow background. Underside pale yellow, sternites medially and laterally dark brown with a layer of fine adpressed hairs especially dense on the 2nd-4th sternites and along median ridge. Legs very similar to adult and moderately developed fringes of swimming hairs on the hind tibiae and tarsi (Fig. 25).

Remarks. This species is very similar to *N. subaureus* Lansbury known from Western Australia (Millstream and the Drysdale River). There are differences in the shape of the male 5th sternite and the parameres are longer. The dorsal coloration of *N. magela* is much darker and the ventral vestiture is not as dense as that of *N. subaureus*. Both species have the posterior lateral angles of the pronotum produced over the embolium, those of *N. magela* more prominently so.

Naucoris subopacus Montandon (Fig. 22)

Naucoris subopacus Montandon, 1913:223-224; Lundblad 1933:62; La Rivers 1971:71; Polhemus 1984:160; Lansbury 1985:114-115.

Material examined. Northern Territory. Nourlangie Swamp, 12°47'S 132°45'E. 26.ii.1983, S. Leighton; 1 male, 1 female; Corndorl billabong, 12°37'S 132°52'E, 16.iii.1983; 9.viii.1984, S.L. 1 male, 1 female;

Magela floodplain, 12°26'S 132°52'E, various dates 1983-4, P.D. 2 males, 1 female; Gulungul billabong 12°38'S 132°52'E, 28.viii.1989, P.D., 1 female.

Descriptive notes. Additional notes on structure omitted from Lansbury (1985): Female: sternites 3-8 covered with a layer of short pale yellow hairs, overlying these, numerous much longer pale yellow hairs covering mid-line from 6th - 8th sternites, a broad row of densely packed long hairs, widening slightly distally. Mesoternal ridge densely hairy (Fig. 22).

Male: sternites 3-6 lacking the conspicuous fine layer of short hairs and covered with scattered long fine hairs. Anterior margin of 4th sternite with a cluster of dense pale yellow hairs. Sternal mid-line not as prominent as in female, lacking the densely packed hairs.

Distribution. This endemic species has a northern Australian distribution.

Family Notonectidae Leach
***Walambianisops wandjina* Lansbury**
(Figs 26-30)

Walambianisops wandjina Lansbury, 1984:42-48.

Material examined. Northern Territory, Gulungul billabong, 12°38'S 132°52'E, 12.ii.1989, P.D. 2 males, 1 female.

Descriptive notes. The series from Gulungul differs in minor details from the type series.

Coloration. Head and pronotum pale creamy yellow, most of scutellum suffused with brown. Antero-lateral margins of corium shining black, remainder of hemelytra and membrane hyaline. Front and middle tibiae broadly black with yellow margins, hind femora and tibiae and to a lesser extent tarsi with narrow yellow margins.

Structure. Outer surface of trochanter with black margin, below a narrow band of densely packed spines, remainder yellowish brown with many fine long hairs (Fig. 28). Ventral margin of front femur almost flat (very slightly convex) and not rounded as in related genera *Paranisops* Hale and *Anisops* Spinola. Outer lower margin with a row of prominent spines, inner margin with a patch of short hairs which are almost continuous with those on trochanter. Male with three cone-like projections on inner ventral margin (Fig. 28). Form from

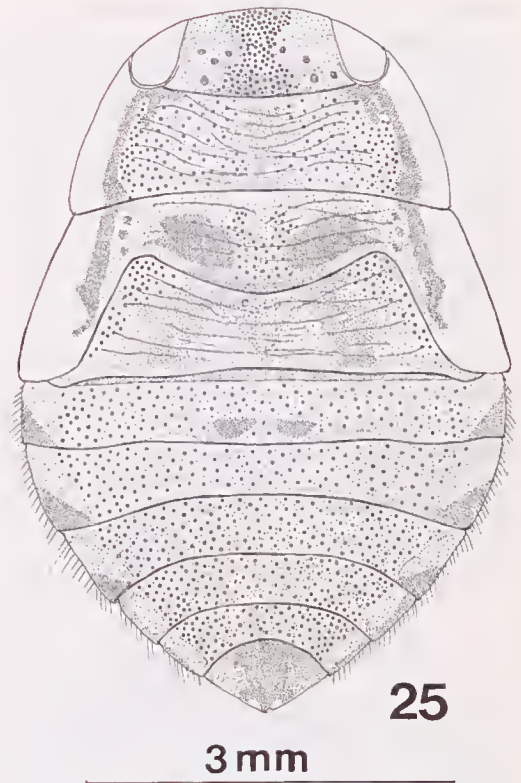


Fig. 25. *Naucoris magela* dorsal aspect 5th instar nymph.

Western Australia has four cone-like projections. Proximal region of middle femur with a prominent group of fine hairs partially obscuring the trochanter and two rows of stout spines extending length of femur (Fig. 26). Outer margin of middle tibiae with a row of short spines which are totally hidden by a longitudinal dense mat of black hairs, these are continued along the tarsi (Fig. 27).

Male genital capsule heavily sclerotised, posterior margin cleft almost to ventral margin. The anterior lobe is strongly curved upwards (Fig. 29). Right paramere and aedeagus (Fig. 30).

Distribution. This genus is an Australian endemic, previous records from the littoral region of the Kimberley area, Western Australia (Port Warrender, Kalumburu, Koolan Island and the Prince Regent River Reserve). The Northern Territory record extends its distribution eastwards approximately 650 Km.

Remarks. The flattened ventral margin of the front femur and the chaetotaxy of the middle leg distinguish *Walambianisops* from

related genera. It is possible to superficially confuse males of *Walambianisops* with female *Anisops* as the front tarsi of both sexes of *Walambianisops* are 2-segmented and there is no rostral prong (Fig. 34, *Anisops* male). Males of *Walambianisops* have the 3rd rostral segment finely serrate (Lansbury 1984). No species of *Anisops* are so far known which have the dense linear mats of fine hairs extending along the tibiae and tarsi of the middle legs (Fig. 27). The variation in the number of cone-like projections on the male front femur are not considered significant as in other respects both forms are similar. The variation in the number of projections on the front femur does mean that the key to Australian genera of Anisopinae (Lansbury 1984) couplet 2 should be changed from "Front femur with four groups of setae"

to "Front femur with several stout setae or projections in a group on the distal ventral margin".

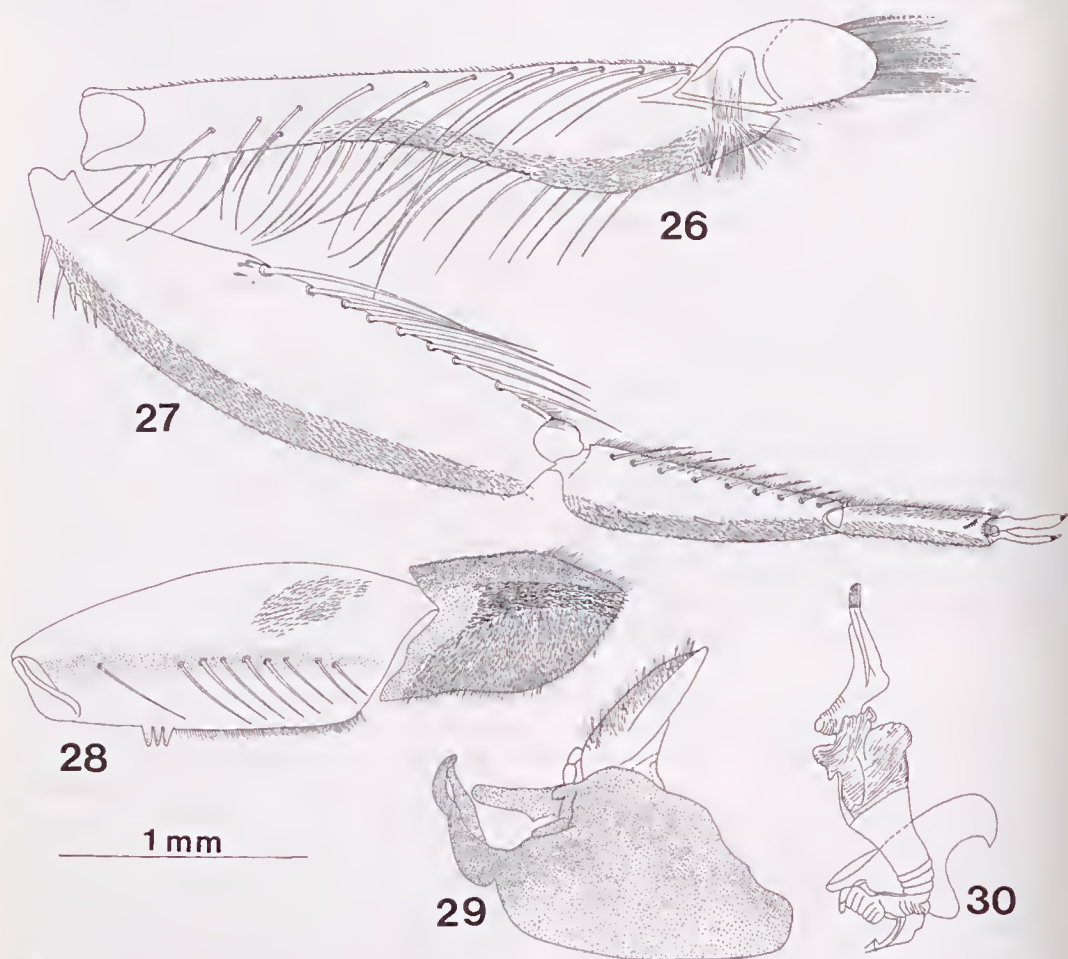
Anisops dostini sp. nov.

(Figs 31-35)

Type material. HOLOTYPE - male, Northern Territory, Gulungul billabong 12°38'S 132°53'E, 12.ii.1989, P.D., in NTM. PARATYPES - one male, 2 females same data as holotype in OSS and OXF.

Additional material. 200 M north Gauge station 009, Magela Creek, 12°40'S 132°54'E, 29.vii.1984, P.D., 1 female; pool sandy crossing, Magela Creek 12°40'S 132°54'E, 29.vi.1984, P.D., 1 female.

Description. Males 7.1-7.3 mm long, females 6.9-7 mm long, width both sexes 2 mm.



Figs 26 - 30. *Walambianisops wandjina* male: 26, middle femur; 27, middle tibia and tarsi; 28, front trochanter and femur; 29, genital capsule; 30, paramere and aedeagus.

Coloration. Eyes uniform reddish brown. Vertex and pronotum pale yellow anteriorly, hyaline posteriorly appearing black, hind margin narrowly reddish brown. Lateral margins of tomentose area of pronotal fovea dark smokey brown. Scutellum translucent, shining, varying between almost uniform dark brown, apically variably creamy yellow. Hemelytra hyaline with black pigmentation of dorsum visible. Coxal plates shining smokey yellowish brown. Sternum black, connexivum marginally reddish brown. Trochanters black, coxae and legs yellowish brown.

Structure Male: Viewed from above head broad, anterior margin of eyes adjacent to anterior width of vertex slightly concave. Greatest width of head almost as wide as pronotum, varying between 10.5–12x anterior width of vertex. Synthlipsis wide subequal to anterior width of vertex. Median head length about 0.5x median pronotal length. Maximum pronotal width just over 2x median length, lateral margins slightly divergent, posterior margin shallowly emarginate (Fig. 32). Facial tubercle slightly raised with scattered fine pale yellow hairs. Labrum just over 2x longer than basal width, median lateral margins almost parallel, labrum with scattered whitish hairs. Rostral prong long, apex acuminate, lateral margins slightly raised (Fig. 34). Stridulatory comb with about 16 prominent pegs and a few much shorter ones (Figs 31 and 35). Front femur robust, distally broadly rounded, tibia with several stout spines along outer proximal margin (Fig. 35). Middle leg (Fig. 33) note absence of fine chaetotaxy on inner surface of tibia and tarsi, see *Walambianisops*.

Structure female: Head from above similar to male, anterior margin of eyes not as concave. Greatest width of head slightly less than pronotal width and 7.5x anterior width of vertex, the latter about 0.12x greater than width of synthlipsis. Median head length slightly more than 0.5x median pronotal length. Pronotal width 2.5x median length, lateral margins divergent. Facial tubercle not raised, labrum similar to male.

Remarks. This species does not key out in Brooks (1951) or Lansbury (1969). It seems to belong to the group which includes *Anisops occipitalis* Breddin (described from Java) and *A. leucothea* Esaki from Samoa. Both species have been compared extensively (Lansbury, 1965, 1984). The front femur of *A. dostini* is

almost rectangular distally (Fig. 31) and most closely resembles *A. douglasi* Lansbury from Western Australia (Port Warrender); the latter has a greatly enlarged facial tubercle, stridulatory comb with 12 pegs, outer 7 much longer than remainder. Fore tibial spines much fewer in number thus resembling *A. occipitalis*. The chaetotaxy of the front tibia of *A. dostini* has more spines proximally and the 3rd rostral segment does not overlap the base of the 4th as it does in *A. occipitalis* and to a lesser extent *A. leucothea*.

In Australia *A. occipitalis* has been recorded from scattered localities in north west Australia (Lansbury 1984) and is also known from a few localities in the Northern Territory and north Queensland.

Etymology. This species is named after Dr. Peter Dostine who kindly made the material from the Alligator Rivers Region available to me for study.

Anisops paracrinita Brooks

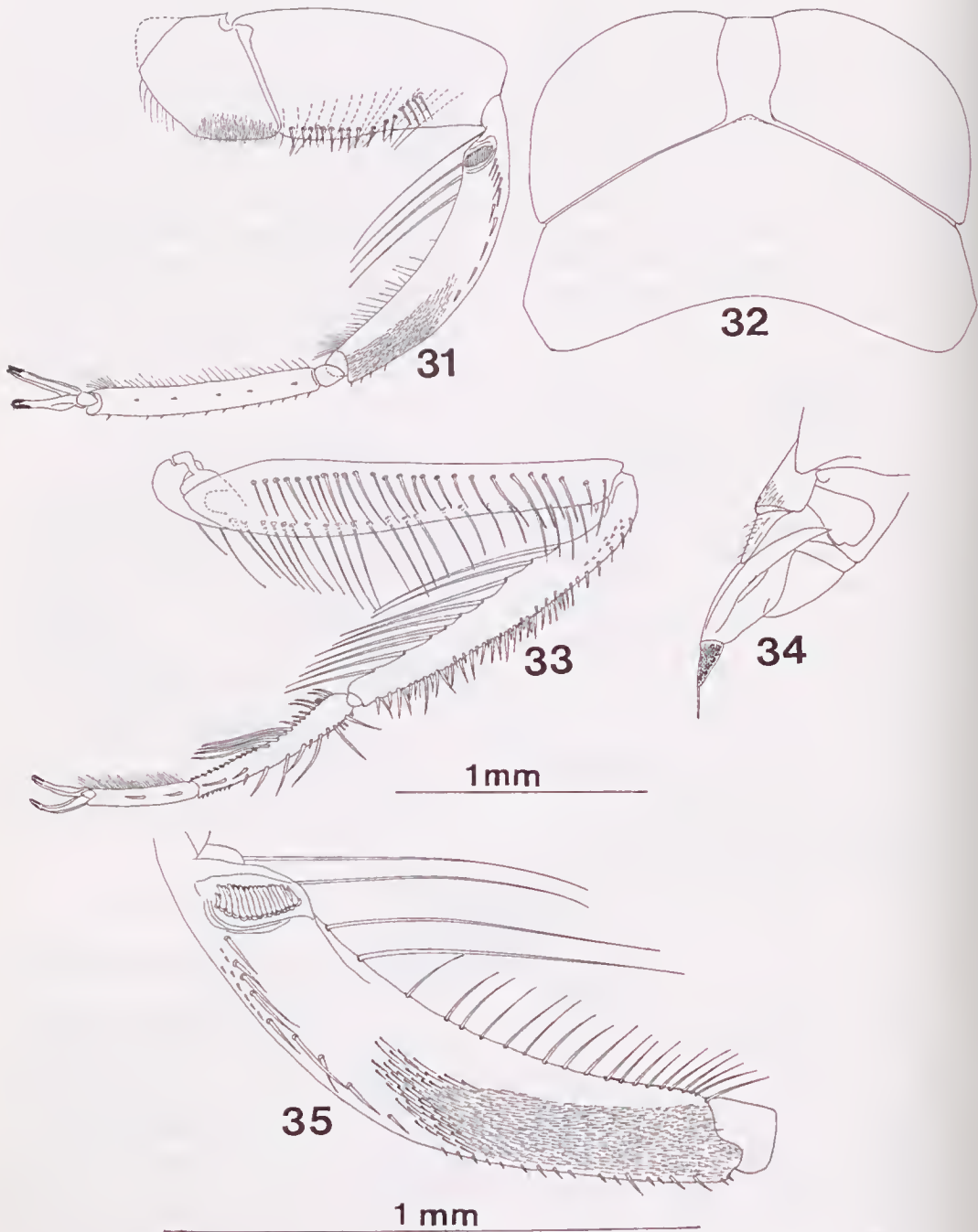
Anisops paracrinita Brooks, 1951:329-331; Lansbury 1964:57-58; Lansbury 1969:434.

Material examined. Northern Territory, Baralil Creek 12°40'S 132°51'E, 13.iii.1983, P.D., 2 males; Nourlangie Swamp 12°47'S 132°45'E, 26.ii.1983, P.D., 1 male; Magela Creek, 200 m north gauge station 009, 12°40'S 132°54'E, 29.vii.1984, P.D., 1 male; Magela Creek, billabong sandy crossing 12°40'S 132°45'E, 29.vi.1984, P.D., 2 males, 2 females; Gulungul billabong 12°38'S 132°53'E, 28.viii.1989, P.D., 3 females; Koongarra, small clear shaded pool 15 cm deep, 9.v.1979, I.L., 8 males, 6 females.

Anisops nodulata Brooks

Anisops nodulata Brooks, 1951:336-337; Lansbury 1969:450-451.

Material examined. Northern Territory, Magela floodplain, 12°26'S 132°52'E, 7.ix.1983, P.D., 1 male; Arnhem Highway, shallow roadside pools 7 km west of Mary River, 17.v.1979, I.L., 4 males, 23 females; Queensland, roadside pools 5 km from Mareeba on Molloy-Mareeba road, 22.v.1979, I.L., 3 males, 6 females; Stradbroke Island, Brown Lake, 9.vi.1979, I.L., 1 male; Papua New Guinea, Madang Province, Nagada Harbour, March 1990 at light, I.L., 1 male.



Figs 31 - 35, *Anisops dostini* sp. nov. paratype male: 31, front leg; 32, head and pronotum from above; 33, middle leg; 34, rostrum side view; 35, front tibia.

Anisops nasuta Fieber

Anisops nasuta Fieber, 1851:484-485; (see Brooks 1951:416-418 for extensive bibliography and synonymy 1851-1941); Lansbury 1969:440-441.

Material examined. Graveside Gorge 13°17'S 132°34'E, 1 female; Magela floodplain, Jabiru 12°26'S 132°52'E, 23.vii.1984, P.D., 1 male; Arnhem Highway, large isolated shaded pool, Wildman River, 17.v.1979, I.L., 1 male; Alice Springs, 26-30th April, 1979; Jessie Gap, small polluted pool, 1 male; rock hole, Ooraminna 1 male; Trephina Gorge pool, 1 male; Hugh River 8 km west Jay Creek, 1 female; temporary pools, Ormiston Gorge 2 males, 17 females; Simpsons Gorge, 1 male, 4 females; Queensland, Molloy, small pool near Rifle Creek, 22.v.1979, I.L., 1 male; Stradbroke Island, Brown Lake, 9.vi.1979, I.L., 4 males, 8 females.

Anisops cf. stali Kirkaldy

Anisops stali Kirkaldy, 1904:113, 132; (see Brooks 1951:319-322 for extensive bibliography and synonymy 1904-1934); Lansbury 1969:434-437.

Material examined. Northern Territory, Graveside Gorge 13°17'S 132°34'E, 18.vii.1988, P.D., 1 female; Baralil Creek 12°40'S 132°51'E, 13.iii.1983, P.D., 3 females.

Descriptive notes. Brooks (1951) gives male dimensions 9-10.6 mm long, female 8.5-10.2 mm long and Lansbury (1969) notes the dimensions male 10.2-11.5 mm long, female 11-12.5 mm long. The 4 females from the ARR vary between 8-10 mm long and conform to Brooks (1951). Specimens from Queensland and localities around Alice Springs and elsewhere tend to be larger. *Anisops stali* is moderately common, often being found in brackish habitats.

Enithares loria Brooks
(Figs 36-37)

Enithares loria Brooks, 1948:45-46; Lansbury 1968:393-394.

Material examined. Northern Territory, Magela Creek, billabong near Sandy Crossing, 12°40'S 132°45'E, 31.viii.1984, P.D., 1 male; Magela floodplain, Jabiru, 12°26'S 132°52'E, 7.ix.1983, P.D., 1 female; Magela floodplain,

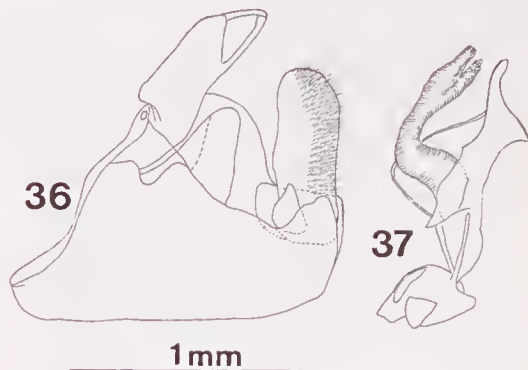
Kakadu N.P. 1984, P.D., 2 females; Gulungul billabong, 12°38'S 132°53'E, 19.ix.1986 P.D., 1 male, 1 female; same locality 28.viii.1989, P.D., 2 males; Buffalo billabong 12°35'S 132°58'E, 13.ix.1989, P.D., 1 female; Fogg Dam near Darwin, 4.v.-16.v.1979, I.L., 1 male, 1 female and many immatures; Koongarra, 9.v.1979, I.L., 1 female; Stuart Highway, Manton River, 15.v.1979, I.L., many immatures; Arnhem Highway, Mary River side pools, 17.v.1979, I.L., 4 males, 4 females and immatures; Arnhem Highway, Stapleton Creek, 15.v.1979, I.L., 1 female; Queensland, farm dam, Julatten, 20.v.1979, I.L., immatures; Water-lily Lagoon, McDougalls Road, Julatten, 20.v.1979, I.L., 5 males, 3 females and immatures; Road side pools, Molloy-Mareeba Road, 22.v.1979, I.L., 8 males, 6 females and immatures; Rifle Creek Lily Pool, Molloy, 22.v.1979, I.L., 1 female.

Distribution. Widespread Australasian species described from Papua New Guinea and also known from the Solomon Islands.

Descriptive notes. Male genitalia differing slightly from the typical form figured from New Guinea (Lansbury 1968). Male genital capsule (Fig. 36), aedeagus (Fig. 37).

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Figs 36 - 37. *Enithares loria* male; 36, genital capsule, 37, aedeagus.

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